*List of specimens.*

| Original number. | Museum number. | Sex. | Locality. | Date. | Remarks. |
|---|---|---|---|---|---|
| 880 | 91402 | ♂ ad. | Matsumoto, Shinshiu ..... | Dec. 21, 1882 | Iris reddish-brown; bill dusky-purplish, under mandible reddish; legs lilaceous. |

**Anas zonorhyncha** Swinhoe. Temm. et Schl. Faun. Japon., 1847, Aves, pl. lxxxii, p. 126, as *poëcilorhyncha* (hybrida): Swinhoe, 'Ibis,' 1874, p. 164: Blakiston and Pryer, Trans. As. Soc. Japan, Vol. X. Pt. I. 1882, p. 96.

Found on Chiusenji Lake in August.

*List of specimens.*

| Original number. | Museum number. | Sex. | Locality. | Date. | Remarks. |
|---|---|---|---|---|---|
| 632 | 91454 | ♀ ad. | Chiusenji Lake..... | Aug. 28, 1882 | |

**Aix galericulata** (L.) Temm. et Schl. Faun. Japon., 1847, Aves, p. 127: Swinhoe, 'Ibis,' 1875, p. 457: Blakiston and Pryer, Trans. As. Soc. Japan, Vol. X. Pt. I. 1882, p. 97.

Found in quite large flocks on the lakes in the interior, in autumn. They also frequent the paddies with *Querquedula crecca*.

*List of specimens.*

| Original number. | Museum number. | Sex. | Locality. | Date. | Remarks. |
|---|---|---|---|---|---|
| 702 | 91453 | ♂ juv. | Tate-Yama, Shinshiu..... | Oct. 19, 1882 | Iris black, with a narrow margin of yellow; bill pinkish-lilac; nail horn color; tarsi and toes chrome. |

## ON A COLLECTION OF SHELLS SENT FROM FLORIDA BY MR. HENRY HEMPHILL.

By W. H. DALL.

The marine fauna of the American coast south from Cape Hatteras and thence to the Mexico-Texan border is at present less known than that of any other part of the coast of North America. Every contribution* toward bettering our information possesses a certain value, even

*In the preparation of this list the following publications have been consulted, beside others of a more general nature:

CATALOGUE OF THE MARINE SHELLS OF FLORIDA, by W. W. Calkins. [Ext. Davenport Acad. Nat. Sciences, 1878, pp. 232–252, with errata and two short supplementary lists.]

LIST OF THE MOLLUSCA obtained in South Carolina and Florida, principally in the

if imperfect, and when those of all classes are enumerated the list remains still extremely meager, and so far without any first-class general work of reference.

In the absence of a good collection of named specimens from the region, it is difficult and tedious work identifying specimens connected, as the South Florida shells are, with the West Indian fauna. Consequently it is with a certain diffidence that I attempted, at Mr. Hemphill's request, to work up the extremely interesting collection he has given to the National Museum. The only catalogues relating to South Florida are extremely imperfect though praiseworthy attempts. Conrad's work was never complete and is antiquated; the paper of Mr. Melvill is marred by the inaccuracies of identification for which the present Mr. Sowerby is famous; Mr. Calkins' work is the best of all, but would have been more useful if the specimens actually collected by

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island of Key West, 1871–'72, by James Cosmo Melvill, M. A., F. L. S. [In the Journal of Conchology, Leeds, vol. 3, Nos. 5 and 6, pp. 155–173, 1881.]

CATALOGUE OF WEST INDIA SHELLS in the collection of Dr. C. M. Poulsen, Copenhagen, by O. A. L. Mörch, pp. 16, 8°, 1878.

HISTOIRE [etc.] DE L'ILE DE CUBA [etc.], Mollusques, par Alcide D'Orbigny. 8°, 2 v. and atlas, folio, Paris, 1841–'53.

CONTRIBUTIONS TO CONCHOLOGY, conducted by C. B. Adams, vol. 1, 8°, New York, 1849–'52.

REMARKS on some species of West India marine shells [etc.], by Henry Krebs. [In Annals Lyc. Nat. Hist. New York, 1866, pp. 394–398.]

MOLLUSCA of the Bermudas, by J. Matthew Jones, esq., F. L. S. [In Trans. Nova Scotia Inst., i, part ii, 1864, pp. 14–26.]

CATALOGUE of recent marine shells found on the coasts of North and South Carolina, by J. D. Kurtz. 8°, pp. 9, Portland, 1860 [also a paper by Kurtz and Stimpson, in Proc. Boston Soc. Nat. Hist. iv, 115.]

DESCRIPTIONS of new genera and species of shells, by Augustus A. Gould, M. D. [In Proc. Boston Soc. Nat. Hist., viii, pp. 280–284, 1862, contains descriptions of several species of small shells obtained by officers of the United States Coast Survey in sounding off the coast of Georgia and the Carolinas.]

MOLLUSCA OF THE ARGO EXPEDITION to the West Indies, 1876, by the Rev. H. H. Higgins, M. A. Museum Report No. 1 [of the Free Public Museum of Liverpool]. 8°, pp. 20, 1 plate, Liverpool, 1876.

AMERICAN MARINE CONCHOLOGY [etc.] from Maine to Florida, by Geo. W. Tryon, jr. 8°, pl., Philadelphia, 1873–'74.

CATALOGUE des Coquilles recuillies à la Guadeloupe et ses dépendances, par M. Beau [etc.], précédé d'une introduction par M. Paul Fischer [Extr.° de la Revue coloniale, Déc. 1857. 8°, pp. 27; with title on cover.]

CONTRIBUCION a la fauna malacologica Cubana, por Rafael Arango y Molina. 8°, pp. 315, Habana, 1878–'80.

DESCRIPTIONS of new species of recent and fossil shells, etc., by T. A. Conrad in Proc. Acad. Nat. Sci., Philadelphia, 1846, iii, pp. 19–47, pl. 1, [and elsewhere.]

FAUNA of Gulf of Paria, etc., by R. J. L. Guppy, F. L. S., Part 1, Molluska. [In Proc. Sci. Assoc. of Trinidad, Dec., 1877, vol. ii, No. 3, pp. 134–157.]

REPORT on the "Blake" mollusks, by W. H. Dall, Bulletin Mus. Comp. Zoölogy, ix, No. 2, pp. 33–144, July–Dec., 1881. [Dredgings in the Gulf of Mexico.] Also numerous papers on particular species or groups of species, including those of the region, by Say, Binney, Bland, Tryon, Stimpson, Stearns in Proc. Phila. Acad. Nat. Sci. and Boston Soc. Nat. Hist., Gibbes, and others.

him had been discriminated in some way from those quoted from other authors, whose localities or identifications may not have been accurate, or at least may not have been confirmed. It is known to most persons interested that the Smithsonian collection of East American shells, especially those belonging south of New York, was in the hands of Dr. Stimpson, and with his own matchless collection was destroyed totally by the fire at Chicago in 1871.

Under these circumstances, believing it better to make some sort of start at cataloging the shells of our southern coast (even at the risk of some erroneous identifications) than to wait for opportunities which do not seem likely to be soon offered, the present list has been prepared in the hope that its deficiencies may stimulate others to correct and enlarge it from specimens actually obtained on the spot. Early collectors were less careful about localities than those of the present day, and frequently took the careless assertions of sailors and dealers as a sufficient statement for determining lots of shells which were often mixed with others from different regions. Varieties were often independently described as distinct species, and allied species lumped by undiscriminating writers or collectors under one name. This is very evident in some of the publications cited. In the present paper no attempt has been made to elaborate synonymy.

The present collection comprises only small and inconspicuous species. The large and common forms, though doubtless collected, were not sent. The careful notes as to station and locality made by Mr. Hemphill greatly increase the value of the catalogue. Few collectors equal him in painstaking care in these particulars, and the reputation he has so justly gained on the western coast will only be enhanced by his Florida work.

Several forms appear to be new. They are described subject to future corrections, but only after carefully searching the literature and monographs in vain. It is possible that some of them may have been previously named, yet if this should prove to be the case no great harm will ensue. Those identified from descriptions without figures are marked with an asterisk. Mr. W. G. Binney has kindly examined the Pulmonates and identified several doubtful species for me.

It must be clearly understood that the list makes no pretensions to completeness.

The fauna of South Florida is largely identical with that of the West Indies, and presents a curious mixture of tropical and temperate forms. When the species are thoroughly known the analogies between this fauna and that of the western coast of America in the same latitude will perhaps appear more prominently than at present. Certain west coast species have been wrongly ascribed to Florida, but there are some which are common to the two regions, and quite a number which present marked similarity, though entitled to different specific names. Certain northern species appear here with their ordinary characters; others

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are modified so as to almost appear distinct. The demarcation between the molluscan fauna of Northern and Western Florida and that of the Keys is less distinct than has been supposed, but it is still sufficiently evident.

## LAND AND FRESH-WATER GASTROPODA.

**Veronicella floridana** Binney.

Sarasota Bay, a new locality for the species. Mr. Hemphill observes that when at rest it becomes of a broad, oval form, but is long and narrow when in motion; its color changes very little by immersion in alcohol.

**Helix (Mesodon) mobiliana** Lea.

Rare at Tampa. This is the genuine *mobiliana*, not the species long confounded with it by authors. Mr. Binney names it *H. jejuna* Say, and considers the two nearly or quite identical.

**Helix (Triodopsis) hopetonensis** Shuttleworth.

Four dead specimens were found by Mr. Hemphill at Fernandina, in April, 1883. Also at Cedar Keys, not rare.

**Helix (Polygyra) pustula** Fèr.

Cedar Keys, not rare.

**Helix (Polygyra) septemvolva** Say.

Key West and Sarasota Key, plenty. Walls of Fort Marion (San Marco) and elsewhere at Saint Augustine, very abundant and variable. Mr. Hemphill sends series, showing wide variation in form, size, and color, and concludes that *septemvolva*, *cereolus*, and *carpenteriana* are possibly merely isolated terms in one really continuous specific series.

**Helix (Polygyra) volvoxis** Pow.

Tampa and Saint Augustine, abundant. Identified by Mr. Binney. A variety of the preceding.

**Helix (Polygyra) carpenteriana** Bland.

Cedar Keys and Key West, abundant. Extremely variable in color and form, as well as size.

**Helix (Polygyra) avara** Say.

Jacksonville, not very common.

**Strobila labyrinthica** Say.

Rare at Sarasota Bay, a new locality for the species.

**Pupa incana** Binney.

Key West, common.

**Leuchocheila rupicola** Say.

Tampa, not rare. Identified by Mr. Binney.

**Macroceramus pontificus** (Gould) Bland.

Key West.

**Cylindrella poeyana** D'Orb.

Key West, not rare.

* * *

**Zonites suppressus** Say.

Fernandina, not rare.

**Zonites (Hyalina) arborea** Say.

Cedar Keys. From the way in which European specialists are splitting up the older species of *Hyalina*, there seem to be fair reasons for retaining for the American forms their American names.

The same may be said for our common *Conulus*, for which, or for stages of which, some European authors have lately proposed new names.

**Zonites (Hyalina) minuscula** Binney.

Tampa, not rare.

**Zonites (Conulus) egena** Say.

Cedar Keys and Fernandina, not very rare. It differs slightly in form and color from the European *Conulus fulvus* Drap, though doubtless not more than European specimens of that species among themselves.

* * *

**Succinea campestris** Say.

Key West and abundantly at Fernandina, the latter of larger size. These are the genuine *campestris* of Say.

**Succinea? aurea** Lea.

Fernandina, not rare. Identified by Mr. Binney.

**Succinea? obliqua** Say.

Walls of Fort Marion, San Marco, Saint Augustine, abundant. Mr. Binney is disposed to refer these to *campestris* junior, but they appear to me more elongated.

**Planorbis dilatatus** Gould.

In a pond at Saint Augustine. This is about the most southern locality yet reported.

**Melampus bidentatus** Say.

Tampa, in marshes near high-water mark, abundant; Cedar Keys, in similar situations; Saint Augustine, plenty.

**Melampus flavus** Gmelin.*

Fernandina, abundant. Many specimens of *M. bidentatus* seem distinguished from this form chiefly by size. This group appears much in need of a general revision.

**Melampus caffeus** Lam.*

Key West, not very plenty; associated with the next species.

**Tralia cingulata** Pfr.

Key West, found at extreme high-water, burrowing under stones six inches below the surface; gregarious, nestling together in colonies, together with *Melampus caffeus*, but much more abundant.

**Pedipes naticoides** Stearns.

Key West, plenty under stones at high tide. The specimens are considerably larger than the type from which Mr. Stearns described this interesting species.

**Leuconia hemphillii** n. s. (Plate X, Fig. 6.)

Shell six-whorled, thin, elongate-oval, marked with fine striæ of growth; whorls inflated, but closely appressed at the suture, last whorl more than half the length of the shell; color, waxen whitish, with a broad wine-colored band around the periphery, except of the earlier whorls, a blush of the same color on the base and outer lip, darkening to a deeper stain on the columella; last whorl somewhat contracted toward the aperture; outer lip thin, not acute, rounded anteriorly and passing into the thick and strongly twisted columella without interruption. Lon., 3.75$^{mm}$; lat., 1.50$^{mm}$; lon. of last whorl, 2.50$^{mm}$; of aperture, 1.50$^{mm}$.

*Habitat* on the mudflats at Cedar Keys, rare. This little species is the first known to inhabit the United States, the *L. sayi* of Kuster being without doubt referable to *Tralia cingulata*. None of the genus are reported from the adjacent shores of the Antilles by the authorities I have been able to consult, and it is not liable to be confused with any of the exotic species.

* * *

**Siphonaria alternata** Say.

Key West, plenty on rocks between tides.

**Siphonaria naufragum** Stearns.

Saint Augustine, not rare.

This fine species should be compared with *S. lineolata* D'Orb. from Cuba.

TERRESTRIAL RHIPHIDOGLOSSA.

**Helicina subglobulosa** Shuttleworth.

Cedar Keys.

**Chondropoma dentatum** Say.

Key West, not rare.

TERRESTRIAL TÆNIOGLOSSA.

**Truncatella caribbeënsis** Sby.

Key West, under dead grass near high-water mark, very abundant.

**Truncatella pulchella** Pfr.

Key West, with the last, abundant.

## MARINE GASTROPODA.

**Aplysia protea** Rang.

Key West, abundant on the beach, after a northerly gale.

**Utriculus canaliculatus** Say.

Sarasota Bay, plenty on the beach and abundant on the mud flats at Cedar Keys. Quite variable.

**Bulla succinea** Conrad.

Mud flats at Cedar Keys, not rare.

**Bulla occidentalis** A. Adams.

Sarasota Key, not rare on beach.

**Actæon punctatus** D'Orb.

Mud flats at Cedar Keys, not plenty.

**Marginella roscida** Redfield.

Abundant on the mud flats at Cedar Keys; much larger specimens at Sarasota Bay in similar localities.

**Marginella redfieldii**, Tryon.

Key West. Three specimens were found by Mr. Hemphill, on the beach, of a moderately large white *Marginella*, which appears from Tryon's figure to be the above species.

**Marginella minima**, Guilding.

Cedar Keys, rare, on the mud flats. According to Mörch this is the same as *M. lavalleana* D'Orb. It has three plaits.

**Marginella opalina** Stearns.

Cedar Keys, with the last species, rare.

**Volutella lacrimula** Gould.

Plenty on the mud flats at Cedar Keys. Off the coast of Georgia in four hundred fathoms (Gould).

**Volvarina succinea** Conrad.

Cedar Keys, muddy flats between tides, plenty. Tampa, Conrad. This may be *V. nitida* Hinds, according to Tryon.

**Volvarina subtriplicata** D'Orb.

Key West. Mr. Hemphill found but three specimens, on massive rocks at low water.

**Olivella oryza** Lam.

Sarasota Bay, on the sand between tides.

**Olivella zonalis** Lam.

Sarasota Bay, with the last species.

**Olivella mutica** Say.

Cedar Keys, on the mud flats, not rare.

**Acus dislocatus** Say.

Cedar Keys, between tides in the sand, abundant. These are rather darker and smaller than more northern ones.

**Acus protextus** Conrad.

Sarasota Bay, on the mud flats and in the sand between tides; those from the former locality differ a little in color from those of the sandy beaches; also rare on mud flats at Cedar Keys. The sculpture of this species varies in strength with its station. It was described by Conrad as a *Cerithium!*

**Nassa ambigua** Mor.

Key West, rare on the beach. A common West Indian form.

**Ilyanassa obsoleta** Say.

Saint Augustine, on mud between tides, abundant.

**Phos intricatus** n. s. (Plate X, Fig. 9.)

Shell with seven whorls, pale waxen, with a yellowish-brown epidermis, strongly sculptured surface, turreted spire, solid texture, and single oval varix. Nucleus smooth, involved like *Neritula;* next two whorls strongly cancellated, with two especially prominent spiral lines; later whorls subtabulate, moderately rounded, sculptured spirally, with strong, rounded, even threads, with single intercalary smaller threads in the interspaces; the third or fourth primary thread, counting forward from the suture, is stronger than the others, and forms the margin of the tabulation; anteriorly the primary threads become more distant and the interspaces deeper; counting forward from the marginal thread above mentioned, there are about fourteen of the primary threads on the front of the last whorl, all of which show traces of nodulation at the intersections, and the anterior six of which are strongly nodulous, though the transverse sculpture is hardly visible in the interspaces; the transverse sculpture is composed of about fourteen rounded ribs, which cross the whorls, but are overrun by the spiral threads; also of rather well-marked lines of growth; the aperture is marked by a strong rounded varix, over which the sculpture runs, the shell being apparently contracted before and behind the varix; aperture rather small, within polished white, with five or six well-marked lirae inside the outer lip and the usual tooth-like callus on the body near the suture; canal short, slightly recurved; suture distinct; operculum brownish, thin, resembling that of *Fusus.* Lon. of shell, 13.2; of last whorl, 8.7; of aperture, 6.0; max. lat. of shell, 6.2; of aperture, 2.5mm. *Habitat,* Key West; abundant under stones between tides.

It is possible that this is "*Ocinebra cyclostoma* Sby." of Melvill's list, a species I do not know, but it is at all events a *Phos* and not cyclostomate. It is distinct from any of the species of *Phos* ascribed to the West Indies of which figures are accessible, and from any of the species

referred to in Petit's or Tryon's catalogue of the genus. Yet I describe it with hesitation, since it seems extraordinary that so common a shell should not have been already described.

Astyris lunata Say.

Tampa, abundant on the "coon oysters;" also at Cedar Keys, all varieties, very common on the sand between tides.

Nitidella cribraria Lam. Melanitic variety.

Key West, abundant under stones between high and low water.

Anachis avara Say.

Key West, on massive rocks at low water, abundant; many varieties of color.

Anachis semiplicata Stearns

Sarasota Bay, rare, on the beach. Also at Cedar Keys.

Anachis acuta Stearns.

Sarasota Key, on the beach, rare.

Anachis ostreicola Melvill.

Cedar Keys, on "coon oysters," stones, &c.

This species was not described by Melvill, but is evidently what he refers to. It is exactly like *A. caneellata* Gaskoin, except in size, being much smaller than Reeve represents the latter to be, but I have no specimens of Gaskoin's species to compare it with. Melvill says it is allied to *A. nigricans*, which is a Panama species.

Columbella rustica Lin.

Cedar Keys, living.

Eupleura caudata Say.

Cedar Keys, very fine. Stunted specimens of this species have been referred erroneously to *E. muriciformis* Brod., a west coast species.

Urosalpinx tampaënsis Conrad.

Sarasota, on oysters brought in by boats, and also on egg cases of *Busycon perversum*, which it is fond of devouring. This seems to me quite in place in this genus, and not referable to *Eupleura*, from the shell. Also at Cedar Keys. The operculum is purpuroid.

Urosalpinx cinereus Say.

Cedar Keys, on rocks, oysters, &c., and in similar localities at Saint Augustine. The Southern specimens are brighter colored and more neatly sculptured than those from New England, but doubtless quite as destructive. It is the "drill" of the oystermen, and very injurious to their young oyster "seed." Operculum purpuroid.

Muricidea floridana Conrad.

On rocks, oysters, &c., between tides at Sarasota Bay. The operculum is muricoid and it is not a *Urosalpinx*.

**Muricidea** n. s.?

Young specimens of a *Muricidea* were obtained by Mr. Hemphill at Cedar Keys, which do not agree with any species reported. It resembles the young of *Urosalpinx cinereus*, but is thinner, broader, and with a proportionally larger aperture within which are two brown revolving bands. The operculum is muricoid. If new, it may be called *M. Hemphillii*.

**Leucozonia cingulifera** Lam.

Key West, on rocks at low water, rare.

Not to be confounded with *L. cingulata*, a very distinct West American species. This is probably what is reported by several authors as *L. Knorrii* Deshayes. The animal is stated by Melvill to be of the color of raw beef. He obtained it from Key West on the coral reefs.

**Tritonidea tincta** Conrad.

Cedar Keys, rocks between tides. Florida Keys (Calkins).

This has been confounded with the quite distinct *T. ringens*, from the western coast of America. It is probably the "*Cantharus coromandelianus* Lam." of Melvill's list. He obtained it at Key West, abundantly, on the reefs. It recalls the *T. insignis* of Reeve much more than the *ringens*, but is quite different from either.

**Tritonidea cancellaria** Conrad.

Cedar Keys, Calkins and Hemphill. Ship Island, Gulf of Mexico, Conrad. It is likely that *Tritonidea floridana* Petit is a mere variety of this shell.

**Mitra albicostata** C. B. Adams.

Key West; reefs at low water, rare. Jamaica (C. B. Ad.) Adams described this species under the above name. Mörch apparently refers to it under the name *albocincta* "C. B. Ad.," but I have not been able to find that the name was altered by Adams.

**Mitra sulcata** Gmelin.

Key West; rare, with the last and next species. Not uncommon in the Antilles.

**Mitra (Mitromorpha?) floridana** n. s. (Plate X, Fig. 12.)

Shell stout, with four normal and two embryonic whorls, the latter smooth, the tip so obliquely twisted in as to appear reversed, the transition from smooth to sculptured surface abrupt; shell fusiform, slender, the last whorl about two-thirds of the whole length; the whole deep red-brownish-black; surface cancellated by transverse and spiral stout threads pretty equally distributed, nodulous at their intersections and with deep interspaces; principal spiral threads increasing from three on the early whorls to ten or more on the last one; suture distinct, not channeled; aperture narrow, outer lip thick, not reflected lirate posteriorly; inner lip with a thin varnish of callus; four spiral plaits nearly

at right angles transversely to the axis of the shell, the posterior plate strongest, the others diminishing anteriorly, the last one separated by quite a space from the anterior edge of the column; notch deep, not reflected. Lon. of shell, 6.00; of last whorl, 4.50; of aperture, 3.2; max. lat. of shell, 2.5; of aperture, 1.00mm.

*Habitat.*—On the reefs at Key West, at low water; rare. This pretty little shell resembles a *Mitra*, but also recalls the forms named *Mitromorpha*, by Carpenter, which seem to stand conchologically between the cones and mitras.

**Mangilia stellata** Stearns.*

Key West, abundant on the reefs at low water. I have not been able to compare this with a typical specimen, but there is little doubt of its identity.

**Mangilia cerina** Kurtz and Stimpson.

Sarasota Bay, mud flats between tides, plenty; also in similar situations at Cedar Keys.

**Drillia ostrearum** Stearns.

Key West, on reefs at low water, rare.

**Drillia albomaculata** D'Orb.*

Sarasota Bay, on mud flats between tides, rare. This does not agree precisely with D'Orbigny's figure, but the differences do not seem to be of specific value, and may be due to defects in the figure. I have not been able to compare types.

**Drillia thea** n. s. (Plate X, Fig. 5.)

Shell elongated, slender, eight whorled, colored olivaceous like the leaves of tea which have been steeped, weathering ashy; apex small, rather blunt; whorls moderately convex, covered with a shining very thin epidermis, marked by silky lines of growth, sculptured by about eleven somewhat oblique slightly curved ribs, which are broadest, stoutest, and paler than the rest of the shell on the periphery, fading away toward the sutures and not distinctly differentiated from the interspaces, somewhat irregularly waved, and concave anteriorly; also by evanescent spiral striæ not always visible and eight or ten raised spiral threads on the anterior third of the last whorl; notch deep, rounded, leaving no fasciole; canal short, straight; sutures distinct, slightly appressed; aperture wide, short, internally claret brown; inner lip with a slight callus; outer lip much curved forward, polished and smooth within. Lon. of shell, 15.0; of last whorl, 8.0; of aperture, 5.5; max. lat. of shell, 5.2mm.

*Habitat.*—Sarasota Bay, rare, on mud flats between tides. Two specimens.

**Drillia leucocyma** n. s. (Plate X, Fig. 8.)

Shell small, dark, solid, strongly sculptured, with about seven whorls, of which the basal color is a very dark olivaceous brown; the interior

is of a claret brown which modifies the external color by transmitted light; spiral sculpture, a strong broad thread close to the inconspicuous suture, separated by a rather broad spirally striated fasciole from a series of two (on the early) to four (on the last whorl) rather strong, spiral smooth rounded threads which are succeeded anteriorly by eight or ten similar spiral threads which, on the base, are nodulous and smoother on the anterior end of the shell; these are crossed by striæ of growth and partly by nine to eleven stout short ribs, beginning at the fasciole and ceasing just beyond the periphery; the most prominent part of these are white and the threads which pass over them become yellowish or white and stronger than they are between the ribs; the little nodules on the basal threads have a tendency to whiten as does also the sutural thread; this is, however, hardly noticeable without a lens; canal short, wide, straight, notch moderately wide, not deep; aperture rather narrow, smooth and claret brown, outer lip not much curved out: lon. of shell, 7.5; of last whorl, 4.0; of aperture, 2.75; lat. of shell, 2.70mm.

*Habitat.*—Key West; rare on the reefs at low water. This recalls *D. albomaculata* D'Orbigny, but is more slender, and differs in the details of sculpture. The last whorl of the specimen figured shows an interruption of the sculpture due to a fracture.

Drillia limonitella n. s. (Plate X, Fig. 10.)

Shell small, thin, translucent, lemon yellow; in fresh specimens the dried animal matter shows through and gives the upper whorls a livid ashy or greenish tinge; there is also a reddish tinge on the columella; the young shells have much the appearance of a *Bela*, but doubtless develop a thickened outer lip and more pronounced notch with maturity, since several nearly mature ones show indications of it. Whorls eight or nine, turrited, angulated by the ribs on the periphery, with a small nearly smooth nucleus, and sharply sculptured subsequent surface; spiral sculpture of numerous sharp threads, quite fine, and extending over the whole shell; two stronger closely adjacent threads at the hardly visible suture; transverse sculpture of strongly marked lines of growth, and about a dozen uniform, narrow, sharply elevated riblets, convex anteriorly, extending from suture to suture, and nodulated with an elongated nodule at the peripheral angle; fasciole faintly marked, notch distinct, canal short, straight, aperture rather narrow; lon. of shell, 6.75; of last whorl, 3.75; of aperture, 2.5; max. lat. of shell, 2.75mm.

*Habitat.*—Cedar Keys, on mud flats between tides. This resembles a miniature *M. cerina* K. & S., but is differently and much more sharply sculptured.

Clathurella jewettii Stearns.

Cedar Keys, on "coon oysters."

Conus stearnsii Conrad.

Sarasota Bay, near low water, abundant. This is probably only an immature stage of *C. floridana* Gabb.

**Eulima conoidea** K. & S.*

Cedar Keys, on mud flats between tides, not common. This agrees with the diagnosis of the species cited, but I have not seen an authentic specimen of Kurtz and Stimpson's shell.

**Eulimella** sp. indet.

Cedar Keys. A small pinkish-white and very pretty shell.

**Eulima (Leiostraca ?) hemphillii** n. s. (Plate X, Fig. 4.)

Shell slender, straight, acute, brilliantly polished, black when fresh (when faded, or by transmitted light, dark claret brown), with nine or ten flattened whorls; sutures appressed, nearly invisible except by transmitted light; aperture rounded in front, pointed behind; outer lip slightly thickened, passing imperceptibly into the inner lip, which is slightly twisted; shell rather thin and without noticeable deposit of callus. Lon. of shell, 3.00; of last whorl, 1.60; of aperture, 0.87; max. lat., 1.00mm.

*Habitat.*—Cedar Keys, mud flats between tides, six specimens only.

This very beautiful little shell appears to be in all respects, except color, a typical *Eulima*, but forms a remarkable exception to the glistening white which is so uniformly characteristic of the other species known. When first received they appeared absolutely black, but the color is less dense than at first, though still nearly black. Many of the species of *Eulimella* or *Leiostraca* have bands of color on the shell, and it is possible that this one may belong rather with them than with the typical Eulimas.

**Obeliscus tesselatus** Adams.*

Cedar Keys mud flats, between tides, abundant. I have not been able to compare specimens of Adams species. This is probably what is referred to as *O. terebellum* by Sowerby and Melvill; it is certainly not that species nor the *crenulatus* of Holmes. It is not at all improbable, however, that the *O. dolabratus* (=*terebellum*) may turn up in South Florida, as it is common in the Antilles.

**Pyramidella ? vincta** n. s. (Plate X, Fig. 7.)

Shell elongated, slender, subcylindrical, apex pointed, with a minute pellucid smooth sinistral half-immersed nucleus and ten or twelve strongly spirally sculptured whorls. Color whitish (specimens all dead, one immature, one fresh); spiral sculpture begins with two strong elevated ridges with deep channels between them and separating them from the ridges of the next whorl; the posterior ridge is crowded with strong fig-shaped nodules with the broad ends backward and axes parallel with the axis of the shell; the anterior ridge is not nodulous; on about the fifth whorl from the nucleus the nodulous ridge becomes double and the figs become oranges, or round nodules, which later are even somewhat elongated in the direction of the ridges; the other ridge remains simple and smooth; at the periphery of the base are two

closely approximated smaller ridges upon which the posterior nodulous ridge grows with the whorl; the suture therefore is invisible and the deep channel above it only simulates a suture; on the base are two very strong spiral ridges, rather squarish, which run directly into the throat of the aperture; the pillar is twisted, especially in the young; it forms a small sharp emargination like that in some species of *Bittium*. the outer lip is simple except so far as modified by the sculpture; if the outer lip be broken away half a turn, two very strong sharp plicæ, transverse to the axis, appear on the pillar and continue up the spire, exactly as in *Nerinea;* on the outside of the whorls there is little transverse sculpture except strong lines of growth; occasionally the stems of the "figs" are prolonged as pseudo-riblets in the interspaces. Lon. of shell, 8.5; of last whorl, 3.25; max. lat. of shell, 2.50mm.

*Habitat.*—Key West, rare, on the reefs at low water.

This is a remarkable shell. It closely resembles *Nerinea* in many particulars and externally is not unlike *N. trinodosa* as figured by Chenu. It differs from *Pyramidella*, to which it is provisionally referred, in its strong spiral sculpture, small number of plicæ, and total absence of callosities.

**Odostomia impressa** Say.

Tampa, on oysters, abundant; also in similar situations at Cedar Keys and at Saint Augustine. A variety(?) *granatina* occurs at Cedar Keys in which the posterior ribs are strongly nodulous, and the appearance thus rendered so different from the type as to suggest they are specifically distinct.

**Odostomia acutidens** n. s.

Shell solid, rude, yellowish-white, acute, six-whorled, marked with lines of growth merely; suture evident, but not channeled; whorls rather flat, except the last, which has a neatly rounded base; aperture with the outer lip acute, rounded to the columella, which stands out from the surface of the shell, with a groove behind it, but no umbilicus; column with one large, very sharp tooth at right angles to the axis of the shell; space between the columella and posterior end of the outer lip polished, not callous. Lon. of shell, 4.12; of last whorl, 2.50; of aperture, 1.75; max. lat. of shell, 2.00mm.

*Habitat.*—Cedar Keys, on the mud flats; not common.

**Parthenia cedrosa** n. s. (Plate X, Fig. 11.)

Shell slender, subcylindrical, whitish, thin, seven-whorled; nucleus sinistral, smooth, remainder except the base reticulated by equal, moderately strong plications, extending from suture to suture, but ceasing at the periphery of the base, about four to a millimeter, with lesser interspaces; underlaid and reticulated by revolving threads, about six on the side of the whorls, and as many more, but fainter, on the base; apex minute, blunt; base rounded; aperture as in *Turbonilla*, with thin

margins and pillar, on which last is an obsolete, or extremely faint, plait-like callosity or twist; no umbilicus; operculum translucent, extremely thin, subspiral, horny. Lon. of shell, 5.5; of last whorl, 2.25; of aperture, 1.50; max. lat. of shell, 1.50mm.

*Habitat.*—Cedar Keys, on mud flats; very rare. I am not sure that I am right in referring this species to *Parthenia*. It appears like a white reticulately sculptured *Turbonilla*, with a faint plait.

Turbonilla viridaria n. s.

Shell slender, yellowish waxen, with red-brown spiral lines and base; sixteen whorls, with about (on the last whorl) twenty-five transverse riblets; base scored with fine spiral grooves, otherwise smooth; aperture squarish, rounded in front; nucleus smooth, sinistral, blunt; transverse ribs extending from suture to suture, slightly oblique, nearly continuous along the spire, the line from base to nucleus making about half a volution, in a posterior sense; whorls flattened, making the outline of the spine nearly a true conic section; suture distinct; riblets rounded, smooth, subequal from end to end; spiral grooves appear sharply and distinctly cut, running (apparently) under the ribs, with red or brown color in the grooves, as if rubbed in; there are three or four from the suture forward, then a distinctly wider interspace, then two more to the suture, or about five to the ends of the ribs on the last whorl, which little more than pass the periphery; base smooth, red-brown, with distinct spiral grooves, more crowded toward the axis; whole shell neatly polished, with a tendency to weather ashy or white. Lon. of shell, 11.0; of last whorl, 2.25; max. lat. of shell, 2.25mm.

*Habitat.*—Cedar Keys, among the sea grass on the mud flats; not rare.

This is nearest *T. rathbuni* Verrill, which has twelve whorls to a length of 13.0 and a width of 4.0mm.

Turbonilla (viridaria var.?) virga n. s.?

Shell resembling the last, but slenderer and more drawn out, much smaller, with a larger and narrower aperture, and with more regular spiral grooves, which are not colored, and fewer ribs. Whorls seven, with about fifteen transverse ribs, larger and carried farther over the periphery than in the preceding species; a tinge of claret color on the pillar, elsewhere greenish, translucent. Lat. of shell, 1.0; lon. of shell, 3.1; of last whorl, 1.5mm.

*Habitat.*—Cedar Keys with the last species. This was sent by Mr. Hemphill as the young of the preceding, but differs from specimens of its own size in having one whorl less in the same length and in having the grooves without color and evenly distributed, and in other features as above. It is probably distinct, but I prefer to leave it as a variety for the present.

Turbonilla (viridaria var.?) punicea n. s.?

Shell resembling *viridaria* but smaller, with thirteen whorls; color whitish at the tip, gradually becoming more and more tinted with a clear

claret brown, the last whorl being the darkest: riblets fainter, less produced anteriorly, last whorl with hardly any ribs; spiral sculpture finer and closer and lines much more numerous than in that species; they are also uncolored; the whorls are more rounded and there are about eighteen instead of twenty-five ribs, which do not reach so far forward. Max. lat. of shell, 1.67; lon. of shell, 8.0; of last whorl, 1.75mm.

*Habitat.*—Cedar Keys; with the last. This species at first sight appears extremely distinct from *viridaria*, but a careful examination with a lens shows that the differences are chiefly in color and strength of sculpture. However, it seems well entitled to a varietal name, and may on further examination prove to be distinct.

These Turbonillas are a very puzzling group, with few good characters for diagnosis, but the above appear distinct from any ascribed to the West Indies or the eastern coast of the United States.

**Scalaria angulata** Say.

Sarasota Bay, on the sand between tides, not common.

**Scalaria lineata** Say.

Cedar Keys, on the mud flats, rare.

**Cerithium ferrugineum** Say.

Sarasota Bay and Key West, abundant on the mud flats between tides.

**Cerithium muscarum** Say.

Sarasota Bay, mud flats between tides, abundant. This is one of the most lovely shells of the genus.

**Cerithium septemstriatum** Say.

Key West, between tides, common.

**Cerithium nigrescens** Menke.

Sarasota Bay, between tides. One of the most abundant shells of the region.

**Cerithium thomasiæ** Sby.

Key West, on the mud flats, scarce. A common Antillean species.

**Cerithiopsis terebralis** Adams.

Key West, on the reefs at low water, abundant; Tampa, abundant on the oysters; Cedar Keys, on the "coon oysters" and on the mud flats, abundant. Also over the whole eastern coast of the United States.

**Cerithiopsis emersonii** C. B. Adams.

Cedar Keys, very large and fine.

**Cerithiopsis tuberculata** Mont.

Key West, reefs at low water, not very common.

**Triforis nigrocinctus** Adams.

Cedar Keys, on "coon oysters," rare; Key West, reefs at low water, rare. The metropolis of this species is farther north.

**Bittium nigrum** Totten.

Tampa, abundant on "coon oysters;" Cedar Keys, abundant on the mud flats. The specimens exactly resemble New England specimens of this widely distributed species.

**Bittium greenii** C. B. Adams.

Cedar Keys, on "coon oysters," rather rare.

**Cerithidea scalariformis** Say.

Cedar Keys, near high-water mark.

Melvill reports "*C. crassilabrum* Ad." from Cedar Keys, which is probably this species, and a "*C. costata* Wood," which may be one of the others; neither name appears to be known to other authors in connection with the fauna of the southern coast or the West Indies.

**Cerithidea turrita** Stearns.

Key West, in the salt ponds, rather rare; all the specimens are somewhat distorted, perhaps from excess of salt.

**Cerithidea tenuis** Pfr.

Mouth of the Manatee River, abundant, but mostly immature. A good series should be compared with the preceding species.

**Vermetus lumbricalis** L., var. **nigricans.**

Sarasota Bay, in masses near high water. All the figures of *lumbricalis* seem to represent something quite different from the small, black, gregarious *Vermetus* of our Florida coast, which almost makes reefs with its solidly aggregated masses whose interstices rapidly fill with other solid matter. For this extremely familiar form the varietal term of *nigricans* is therefore proposed until a careful study of the group shall determine what the typical *lumbricalis* really is.

**Rissoina dubiosa** C. B. Adams.

Key West, plenty on the reefs at low water.

**Rissoina pulchra** C. B. Adams.

Key West, rare in the same localities as *R. dubiosa*.

**Rissoina chesneli** Mich.

Cedar Keys, plenty on the mud flats. The above are all common to the West Indies.

**Bythinella obtusa** Lea.

Key West, in the salt ponds, rare; also in the creek at Jacksonville.

Lea's species was erroneously attributed to Ohio, and hence has not since been recognized, but the specimens agree well with his figure and description, and it is probable that his correspondent's labels got mixed.

**Melaraphe scabra** L., vars.

Key West, on the mangrove bushes; sometimes ten feet above high water. There are numberless varieties, many of which are very beau-

tiful, and a good many of which have received names from closet naturalists.

**Tectarius muricatus** Born.

Key West, on rocks between tides, extremely abundant.

**Planaxis lineata** Lam.

Key West, on rocks between tides, gregarious and abundant. This common West Indian form has apparently not been hitherto reported from our shores.

**Assiminea concinna** C. B. Ad.*

Key West, reefs at low water, common. I have not been able to compare this with a specimen of Adams' shell, but the description agrees fairly.

**Assiminea auberiana** D'Orb.

Near high-water mark at Cedar Keys, among the grass. A Cuban species.

**Natica canrena** L.

Sarasota Bay, on the sand near low-water mark, not rare.

**Neverita duplicata** Say.

Cedar Keys, on the mud flats, common. A widely distributed species with several near relatives.

**Phasianella umbilicata** D'Orb.

Key West, rare on the reefs at low water. A Cuban species with which *P. affinis*, C. B. Adams is perhaps identical.

**Neritina reclivata** Say.

Tampa, abundant between tides. This, like many of the large species of *Neritina*, seems to be strictly an inhabitant of salt water.

**Modulus lenticularis** Chemn.

Key West only dead ones on the beach. It is closely allied to the next species.

**Modulus floridanus** Conrad.

Sarasota Bay, on the broad leaves of a marine grass, abundant. I have not seen typical specimens of either, but suspect it is the *M. corrugatus* of Stimpson referred to in some catalogues, but described I do not know where. Also at Cedar Keys.

**Adeorbis adamsi** Fischer.

Cedar Keys, on the mud flats, rare. Common to the Antilles.

**Galerus candeanus** D'Orb.

Sarasota Island, on the beach; not rare, but only dead ones were found. A Cuban species.

**Crepidula unguiformis** Lam.

Sarasota Bay, on the outside of "coon oysters," between tides, abundant.

Fissurella nodosa Born.

Key West, on rocks between tides, rather rare. A common West Indian species.

Fissurella alternata Say.

Cedar Keys, on rocks between tides.

Lucapina? fasciata Pfr.

Key West, on rocks at extreme low water; only two living ones were obtained. From these it is evident that this animal does not belong to the same genus as the great *Lucapina crenulata* of California, but in the present confused state of the *Fissurellidæ* it is impracticable to state positively where it should be placed. The shell is about one-third covered by the mantle and the anterior (shorter) end is depressed, the body of the animal being much thicker behind; the posterior part of the shell is raised and its upper surface is therefore directed forward and upward. The soft parts (in alcohol) are of a whitish color; the margin of the mantle, which has a smooth surface and simple or non-papillose edge, extends widely around the shell, falling and covering the head, sides, and back of the foot like a curtain; the branchiæ are symmetrical, their tips extend forward to the top of the head; the sides of the foot and top of the head and muzzle are speckled with reddish brown, smooth and with only a single series of lateral papillæ; these papillæ begin at the anterior part of the foot on a longitudinal line with the tentacles, the anterior ones are about one-third as large as the tentacles (every alternate one, however, being much smaller); they rapidly diminish in size backward and become more distant and uniform (or the small intercalary ones disappear); there are altogether about twenty on each side; the muzzle is long, granulose and rather broad at the end and divided in the middle line below; the tentacles are clavate, long, with large, black eyes situated on stout tubercles at their outer bases; behind the right eye-tubercle and proceeding from its base is a tentacular process, slender, cylindrical or longitudinally wrinkled and slightly hooked at the end, which may be an intromittent organ; it was much smaller in one specimen than in the other, and in that specimen the lateral papillæ were also smaller and less numerous; the difference seemed disproportionate to the difference in total size, but these organs are quite variable in this respect, and part of the difference may have been due to shrinkage from different strengths of alcohol in which they were originally immersed. The dorsal aperture, as in other *Fissurellidæ*, serves the purpose of an excurrent sewer and is nearly filled by the large, oval papilla, through which the rectum opens, and a simple frill of mantle edge. The whole creature is much more like *Fissurellidea bimaculata* Dall of California, both shell and soft parts, than like the so-called *Lucapina* referred to. The characters of the typical species must be more closely inquired into before the proper allotment of the different forms included in the different genera can be finally decided.

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**Hipponyx antiquatus** L.

Key West, between tides, under stones, not rare. Exactly like Californian specimens, at least so far as the shell is concerned.

**Patella puncturata** Lam.

Key West, living on the reefs at low water; rare. A common West Indian species.

**Ischnochiton pectinatus** Sby.*

Key West, on rocks at low-water, abundant.

**Ischnochiton multicostatus** C. B. Adams.*

Key West, with the last, but rare. I have not been able to compare either of these species with authentic types of the species to which they are here referred, but they are certainly *Ischnochitons* and probably these species. Mr. Hemphill, whose experience and success in collecting Chitons is well known to those interested in that group, calls attention in his notes to the fact that he found only these two species in the localities in Florida which he visited. Mr. Calkins reports *Chiton piceus* Gmelin, and *Chætopleura apiculata* Say, abundant in the Keys; is this due to erroneous identifications (so frequent in this difficult group), or do the species have different times for approaching the shore? Melvill does not mention any Chitons. They are comparatively rare in the West Indies. In the Blake Mollusca I have described a fine species, *Hanleyia tropicalis*, from one hundred and twenty-eight fathoms off Sand Key.

## LAMELLIBRANCHIATA.

**Pholas (Martesia) cuneiformis** Say.

Cedar Keys.

**Teredo ? megotara** Hanley.

Cedar Keys. This does not agree with the figures, but seems nearest to *T. megotara*. The figures extant of Teredines seem particularly poor.

**Teredo (Lyrodus) chlorotica** Gould.

Cedar Keys. Nearly related to Gould's species if not identical.

**Xylotrya fimbriata** Jeffreys, var. **subæqualis.**

Cedar Keys. This differs from the type in having the anterior and posterior areas subequal in size.

**Solen americanus** Gould (**S. ensis** of earlier American authors).

Very young specimens were sent from Cedar Keys, where Mr. Hemphill obtained them on the mud flats.

**Tagelus gibbus** Spengler.

Abundant on the mud flats near the mouth of the Manatee River. Of extremely wide distribution.

**Mactra fragilis** Chemn.

Cedar Keys, young.

**Lyonsia hyalina**, var. **floridana** Conrad.

Plenty on the mud flats at Sarasota Bay and Cedar Keys.

**Macoma proxima** Gray.

Abundant at the mouth of the Manatee River. Large and fine, approaching the form *calcarea*.

**Tellina lævigata** L.

Young specimens sent from mud flats at Sarasota Bay. Large and extremely fine ones are abundant at Tampa, judging by specimens obtained by Conrad and others.

**Tellina agilis** Stm.*

Specimens which appear to belong to this species, of which no authentic type is accessible to me, are reported by Mr. Hemphill to be found abundantly on the mud flats at Sarasota Bay, and a variety of the same from similar localities at Cedar Keys. It seems to be quite variable.

**Tellina mera** Say.*

Key West, rare on the beach. The specimens sent, though slightly rounder in outline than Say's figure, agree with it and with his description in all essentials. The species has been, in a manner, lost sight of for many years.

**Syndosmya æqualis** Say.

Cedar Keys.

**Semele nexilis** Gould.

Cedar Keys, young, probably this species; rare at low water.

**Donax variabilis** Say.

Abundant in the sand at low water at Sarasota Key and at Fernandina. A most common species on the southern coast everywhere.

**Lucina tigerina** L.

Young specimens plenty on the beach at Key West.

**Lucina** sp. indet.

Three species of Lucina have been received from Cedar Keys but not yet identified.

**Loripes edentula** L.

Abundant between tides at Sarasota Bay.

**Cyrena floridana** Conrad.

Mud flats near high water at Sarasota Bay. This species was described a second time by Mr. Conrad himself in 1869 as *Cyrena protexta*.*

* Cf. Am. Journ. Conch. v, p. 107, pl. 12, Fig. 3, Oct., 1869.

It is apparently a salt-water mollusk, and varies from pure white to dark purple, with, in general, little or no epidermis.

**Cyrena carolinensis** Lam.

Numerous rather small specimens, all dead, were obtained in the "salt ponds" at Key West. They appear to be uniformly purplish.

## PARASTARTE Conrad.

*Parastarte* Conrad. Proceedings Acad. Nat. Sci. Philadelphia, June, 1862, p. 288.

*Callicistronia* Dall, MS. Science ii, p. 447, Sept. 28, 1883.

Shell porcellanous, thick; with color markings; covered with a glistening dense vernicose epidermis; without lunule or escutcheon; ligament stout, very short, wholly external, nearly central, but placed a little more to the same side of the beaks as the pallial sinus, that is to say, posterior; almost covered by the umbones; margin crenulated; muscular impressions large, strong, subequal; pallial line with a small rounded sinus; hinge with one simple large ungrooved triangular tooth in the right valve under the subcentral umbo; the posterior margin of the shell obsoletely grooved; left valve with two stout divaricating simple teeth, with a triangular space between them; an obsolete groove on the anterior shell margin; soft parts unknown; animal viviparous.

I am indebted to Mr. Tryon for informing me of Conrad's description which I had overlooked, as it is in the midst of irrelevant matters and I believe has never been noticed by any other author. His diagnosis contains no differential characters, and he seems to have overlooked altogether some of the most important. He was afterwards, according to Mr. Tryon's note, disposed to unite it with *Goodallia* of Turton, which it resembles in a general way; but that shell appears not to differ from *Astarte;* has an entire pallial line; the large triangular tooth is generally grooved, though sometimes very faintly; the ligament is long as in *Astarte*, and there is a distinct lunule. With regard to its reproduction nothing is known.* *Goodallia* dates from 1822, and *Mactrina* Brown is synonymous with it.

**Parastarte triquetra** Conrad. (Pl. X Figs. 1–3.)

*Astarte triquetra* Conrad, Proc. Acad. Nat. Sciences Philadelphia, vol. iii, p. 24, pl. 1, fig. 6, 1846.

This little shell was very briefly described by Mr. Conrad. It is of a yellowish color, with a purple stain inside in many specimens, which is visible outside as a purple ray which includes and is strongest on the beaks; the epidermis is straw-colored and of most brilliant polish; the form of the shell subtriangular, becoming ventrally elongated with

*After examination of many specimens of the type of *Goodallia* I have been able to find nothing but eggs. These were few in number in each specimen, and disproportionately large. The genus is probably oviparous.

age and disproportionately thick; in one specimen I found nearly fifty young ones, about 0.20mm in diameter, lenticular, extremely thin, but already showing the purple tinge, rather compressed and with hardly perceptible beaks, while the adult is inflated with very prominent beaks. The dimensions of a fully adult specimen are 3.0mm high, 2.25mm in greatest length, and 2.5mm in greatest thickness. They were obtained by Mr. Hemphill at Cedar Keys on mud flats, and at Sarasota Bay on the beach, abundantly. Conrad's specimens came from Tampa Bay. The relations of this beautiful little shell are uncertain, but until more is known I should be disposed to keep it in the vicinity of *Astarte*, which, so far as the shell is concerned, appears to be its nearest relative, though I do not feel confident that this will be its permanent location.

**Crassatella (Eriphyla) lunulata** Conrad.

Beach of Sarasota Island, plenty but dead.

There is little room for doubt that this name should take precedence over *mactracea* Linsley and that the two names refer to one and the same species. The specimens are the bright southern form of "*Gouldia*" *mactracea* of authors.

**Cytherea (Transennella?) conradina** n. s.

Shell of much the same general form of *C. cuneimeris* Conrad, but without the radiating sculpture and the strong sculpture on the ribs. The color is nearly white with fine zigzag markings of yellow; a touch of pink internally in some valves; exterior smooth, or concentrically grooved; lunule marked by a strongly impressed line, proportionately large; escutcheon not distinguishable; shell moderately inflated, beaks not very prominent, recalling *Cyrena floridana* in shape but more rounded off; interior smooth, pallial sinus moderate, angular; beaks subcentral; margin internally grooved at right angles to the hypothetical radii of growth. Long, 8.0mm; altitude, 5.7mm; diameter, 3.5mm.

*Habitat.*—Rare at Cedar Keys, in mud between tides.

The most remarkable feature of this shell is the internal grooving of the margins. The ventral margin is deeply scored parallel to the long axis of the shell, the grooves turning upward at the ends, while on each side of the beaks the margin is closely and deeply grooved in a direction nearly parallel to the anterior and posterior slopes. I have seen nothing like it in any other bivalve. The grooves are not, as might be supposed, parallel with the lines of growth but invariably, except at the center of the base, form a more or less acute angle with them. The only analogue to such sculpture known to me occurs on the outside of such *Lucinidæ* as the Lamarckian *L. divaricata*, *Woodia*, and some *Nuculidæ* and Yoldias. But on the inside of any shell such sculpture has not, so far as I am aware, been reported, apart from structures appertaining to the hinge. Several gentlemen to whom the form in question has been submitted are unanimous in considering it as worthy of more than specific rank, and while I am yet in doubt as to the systematic value of the structure de-

scribed, I would suggest for it, in case it be deemed worthy of separation, the name of *Transennella*.

**Anomalocardia flexuosa** Lin.

"Salt Pond" at Key West, numerous but immature.

**Cardium mortoni** Say.

In sand between tides near the mouth of the Manatee River. The colors are more vivid than in northern specimens, and the shell is usually much inflated.

**Cardita floridana** Conrad.

Plenty on the mud flats at Sarasota Bay.

**Leda ? eborea** Conrad.

Cedar Keys at low water. Like *L. jamaicensis* but slenderer, more pointed, and with coarser concentric ribs.

**Arca (Barbatia) dominguensis** Lam.*

Rare, under stones at Key West.

**Arca (Barbatia) gradata** Broderip.

With the last.

**Perna ephippium** Lam.

Rather rare. Rocks between tides at Key West.

**Modiola papyria** Conrad.

Plenty; on the mud flats at Cedar Keys. Tampa Bay (Conrad).

This exquisite species deserves a more thorough examination. It appears to exist around the borders of the Gulf and of the Caribbean sea; at least I have seen very much larger specimens from near Aspinwall on the Isthmus. It resembles *Mycetopus* in several particulars, and it is doubtful if the soft parts are similar to those of typical *Modiolæ*. It is extremely similar to (and perhaps identical with) *Modiola petagnæ* Scacchi as figured by Reeve.

**Mytilus exustus** Lam.

Plenty on the beach at Key West. Exists throughout a great part of the Antilles.

**Lima ? tenera** Chemn.

Cedar Keys, rare; also in the West Indies.

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The following species are noted or described as new in the papers of Messrs. Calkins and Melvill:

**Triton veliei** Calkins l. c., p. 235, pl. viii, figs. 1, 2.

Key West, Ve ie, and Marco, Collier.

**Odostomia alba** Calkins l. c., p. 239, pl. viii, fig. 3.

Cedar Keys; 2–6 fathoms; Calkins.

It may be noted that the specific name *alba* is several times preoccupied in this genus, while neither Mr. Calkins' figure nor description are sufficient to identify the shell by. Indeed, so far as the former indicates anything, it is that the shell is not an *Odostomia*, but some form of *Eulimella* or *Turbonilla*. It is to be hoped Mr. Calkins will give further information in regard to it.

**Cancellaria stimpsonii** Calkins l. c., p. 250, pl. viii, figs. 4, 5.

Cape Sable, Florida, Dr. J. W. Velie.

**Hemifusus corona** *β* **estephomenos** Melvill l. c., p. 157. Sowerby, P. Z. S., 1878, pp. 795, 796, pl. xlviii, fig. 13.

One of the endless varieties of the very variable *H. corona*.

**Latirus cayohuesonicus** Sow., jr., and Melvill P. Z. S., p. 795, 1878. Melvill l. c., p. 159.

Key West; from which the authors have apparently derived their extraordinary specific name.

**Anachis ostreicola** Melvill l. c., p. 160.

Not described but said to be "allied to *C. nigricans* but smaller"; "found on oyster shells at Appalachicola." Noted in the preceding list.

**Natica campechiensis** (Recluz) Melvill l. c., p. 161.

The author includes under this name *Neverita duplicata* and *Lunatia heros*.

**Conus melvillii** Sow., jr., P. Z. S., p. 795, 1878.

Key West. Mr. Sowerby identifies among Mr. Melvill's shells *Conus japonicus* Hvass and *C. nebulosus* Solander, neither of which has been known from this region, and it may fairly be said, in view of some of the other identifications, that they still need confirmation by a competent authority.

In a note Mr. Melvill adds in regard to—

"*Melaniadæ and Unionidæ*.—At Key West I did not come across a single specimen of these families, which is not surprising in the inland torrents, but are fond of fresh water. I found several species in my North American travels, but very few in South Carolina, and those of no particular peculiarity of form" (l. c. p. 173).

Perhaps some of our winter sojourners in Florida will take the hint, and more particularly examine the "inland torrents" of Key West for the missing shells.

Mr. Hemphill also collected specimens of *Glottidia pyramidata* Stimpson, at Cedar Keys; which have been received as this paper was passing through the press.

W. H. DALL.

JUNE 19, 1883.